

GLOBAL TRANSPORTATION NETWORK (GTN)



Air Force ACAT IAM Program

Total Number of Systems:	1 (8,000 users)
Total Program Cost (TY\$):	\$184M
Average Unit Cost (TY\$):	\$184M
Full-rate production:	3QFY97

Prime Contractor

Lockheed Martin

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

The Global Transportation Network (GTN) is an automated command and control information system being developed by the United States Transportation Command (USTRANSCOM). The system collects information from selected transportation systems operated by the Services and the Defense Logistics Agency, integrates it into a single data base, and supports a worldwide family of transportation users and suppliers (both military and commercial). GTN integrates supply, cargo, passenger, and unit requirements and movements with airlift, air refueling, and sealift schedules and movements to provide in-transit visibility of personnel, materiel, and military forces. The system also provides a planning capability for current and future transportation operations and furnishes the movement and scheduling portion of the Global Command and Control System.

GTN supports USTRANSCOM's in-transit visibility mission requirements by bringing accurate, timely transportation information (previously available only through numerous unrelated systems) into a single, integrated view of the Defense Transportation System. This information is also available for use by several thousand transportation providers and customers via the World Wide Web. When combined

with planning and analysis tools, GTN will provide a capability essential to planning, directing, and controlling current USTRANSCOM operations. The system will organize and display vital transportation asset and resource information to assist USTRANSCOM in understanding, identifying, and implementing various transportation options and courses of action. To support future operations, GTN will provide information and simulation models to improve transportation feasibility determination, plan refinement, and re-planning. Through a set of coordinated strategic transportation models and related tools, planning support will provide capabilities to develop and analyze various transportation options; forecast movement requirements; determine the best mix of modes, channels, and shipment quantities; compare planned versus actual movements; and identify potential resource shortfalls.

Two separate GTN data bases are maintained at Scott AFB, IL, at the unclassified and secret security levels. The unclassified data base is replicated in the secret version, which also receives input from classified sources. There is an alternate site at Robins AFB, GA. GTN supports the *Joint Vision 2010* concept of *dominant maneuver* by managing the deployment of widely dispersed joint air, land, and sea forces, and reducing “buildup time.” It supports the *Joint Vision 2010* concept of *focused logistics* by fusing information, logistics, and transportation technologies to provide rapid crisis response and track/shift assets, even while en route.

BACKGROUND INFORMATION

Initially, the contractor was developing the GTN incrementally, with five deliveries scheduled through 2000. DOT&E approved the TEMP on June 30, 1995. GTN Delivery 1, which constituted IOC, completed DT&E at Scott AFB in October 1996. AFOTEC, the independent OTA, conducted selected OT in conjunction with DT, and in December 1996, conducted dedicated OT at 13 test sites in the United States and Europe. This IOT&E, completed in February 1997, primarily addressed the accuracy and responsiveness of GTN when subjected to typical queries from users in their operational environments and also measured operational availability. Based on IOT&E results, a conditional Milestone III approval was granted to deploy Delivery 1 software.

Delivery 2 occurred during 1998. AFOTEC conducted a risk assessment and determined that combined DT/OT activities would be sufficient to thoroughly evaluate the new delivery. AFOTEC monitored the continued DT of the system to ensure that the system being delivered was operationally effective and suitable. During 1998, both the technical architecture and acquisition program changed considerably. GTN was redesigned as a web-based system only, and it was no longer necessary to deliver software applications to the users. Instead, users can now access the GTN web sites (both classified and unclassified) and query the data bases using hypertext techniques. Also during this period, the “incremental” acquisition strategy (i.e., specific, planned “deliveries”) was abandoned in favor of an evolutionary approach wherein: (1) enhancements are made every few months based on continuous user input, (2) the data base is expanded as new source systems are brought on line, and (3) development continues on the Operational Requirements Document (ORD) requirements for transportation planning and support of future operations.

TEST & EVALUATION ACTIVITY

A Combined Test Force headed by AFOTEC conducted a second risk assessment of GTN that was approved by DOT&E in June 1999. This assessment concluded that AFOTEC should continue to assess the progress of GTN through combined DT/OT activities, and conduct periodic Operational Field

Tests (OFTs). During the period June-August 1999, AFOTEC conducted an OFT in conjunction with a JCS annual exercise, TURBO CADS 99. This exercise was being held to swap out munitions in the Korean theater of operations. AFOTEC monitored the use of GTN to support the movement of containerized munitions from 11 depots to the port of embarkation at Military Ocean Terminal Sunny Point, NC. Cargo movement was then tracked from the port of embarkation to the overseas ports of debarkation in Guam and Korea. The OFT included observing users querying GTN, administering user questionnaires, and comparing actual movement data to the data obtained from the GTN data base.

TEST & EVALUATION ASSESSMENT

During the TURBO CADS 99 OFT, 16 measures of performance (MOPs) were evaluated to determine how well GTN supports the Defense Transportation System in-transit visibility and sustained operations. Of the 16 MOPs evaluated, 10 met user criteria, 5 resulted in "favorable" questionnaire responses, and 1 failed to meet user criteria.

The MOP that failed is not a Key Performance Parameter; it is related to query response times. During the OFT, GTN met the one-minute response time requirement for simple queries 91 percent of the time (ORD requirement 95 percent) and the five-minute response time requirement for complex queries 71 percent of the time (ORD requirement 95 percent). Query response times varied by location but were noticeably longer at overseas locations. This was attributed to limited communications infrastructure and large number of users on the local area network.

Upon the completion of the OFT, the GTN Combined Test Force, including members from AFOTEC, TRANSCOM J-4, and GTN Program Manager Office, conducted another risk assessment of GTN, with DOT&E participation. The risk assessment results showed that the potential mission impact of future GTN software deliveries is moderate and the development risk of future GTN software deliveries remains low. DOT&E will continue to monitor the progress of GTN, with special interests on security impacts to its Web access.

